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A GUIDE

TO THE

MINERAL WATERS

OF

TUNBRIDGE WELLS;

WITH

INSTRUCTIONS AS TO DIET, EXERCISE,
&c. &c.

BY ROBERT HUTCHINSON POWELL, M.D.

Author of "A Medical Topography of Tunbridge Wells," &c.

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1847.

PREFACE.

THE Author has been induced to publish the following short Treatise, in order to present the invalid Visitor with a concise account of the Mineral Waters of Tunbridge Wells; referring those who may be desirous of more detail, and of information on other subjects, to his "MEDICAL TOPOGRAPHY OF TUNBRIDGE WELLS."

The improved state of the Chalybeate Establishment on the Parade affords him much satisfaction, with reference both to its architectural change and internal arrangements. The prompt manner in which his suggestions for these improvements were attended to, has clearly shown that the subject only required to be taken up by some one of the resident medical profession; and the energetic co-operation the writer has received from the mercantile inhabitants, affords an ample guarantee for the increasing prosperity of Tunbridge Wells.

The Author is enabled to treat with confidence on the subject of the following pages; having personally analyzed the waters, and investigated all other matters relating to the mineral springs of the town. Discrimination and concentration having been aimed at, the result may prove more useful to the invalid than larger *tomes* with loftier pretensions.

GLOUCESTER HOUSE, PARADE, AND
ROCK LODGE, TUNBRIDGE WELLS.
May, 1847.

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A GUIDE

TO THE MINERAL WATERS

OF TUNBRIDGE WELLS.

FIRST SECTION.

PHYSICAL, CHEMICAL, AND MEDICINAL PROPERTIES OF THE CHALYBEATE SPRINGS OF TUNBRIDGE WELLS.

TUNBRIDGE WELLS will ever possess an interest for many invalids, from the celebrity of its mineral waters, sustained for nearly three centuries in consequence of their curative effects on the enfeebled frame.

PARADE CHALYBEATE SPRING.—The spring now chiefly used is situated at the north-east end of the Parade. The attached building, of Italian design, has recently undergone some architectural changes. It has two aspects; the principal one fronting the Parade, the side one looking towards the common. A portico, with ten fluted columns, surmounts the reservoirs; it has a central projection, and admits light through glazed apertures at the top; the entire being protected by an iron railing. The approach to the private basin is in the centre of the portico, skirted by three columns on either side. To the left hand is a marble slab, on which is placed the renovating beverage. The public basin lies to the left of the building; as its name denotes, it is intended for the less independent classes. A door on the side aspect opens into the Cloak-room, having a passage communicating with the Dipper's-hall. These arrangements admit of many accommodations not previously existing.

This time-honoured spring is said to arise in Speldhurst Parish; whence, gradually straining through the ferruginous strata of the district, and moving in an upward direction, it finally emerges at the end of the Parade, through apertures at the bottom of a large porcelain basin. The basin is protected by a cover at night, and great care is observed by the attendants to keep it and the appendages perfectly clean. The quantity of water yielded varies with the season; the mean of three measurements being six pints and a fraction in a minute. The strength also varies with the supply; the chalybeate impregnation being less as the quantity of water increases.

It is probable that the spring ascends from a considerable depth, from the uniformity of its temperature at all seasons: this is attributable to the gradual influence of summer and winter, extending to great depths, upon the earth.

Physical Properties. — The water is perfectly limpid and colourless; its odour is perceptibly chalybeate, tasting palatable, fresh, and strongly marked with a peculiar *goût* of iron. The temperature of the water at all seasons is 49° Fahr. On raising it to 68°, the water exhibits a few air bubbles adhering to the sides of the glass; an iridescent pellicle floats on the surface after a few hours; the water assumes an opalescent appearance in about six hours; depositing, in the course of twenty-four hours, a yellow precipitate on the sides and bottom of the vessel, and losing entirely its tonic properties. This change takes place more rapidly by applying a heat of 212°. It is retarded, but not prevented, by occlusion from the atmosphere. On applying a heat of 140°, no change ensues in the water, except the disengagement of gaseous bubbles; beyond this temperature it becomes turbid, and deposits brown flakes on cooling. The specific gravity of the water is 1.1007; being less than that of ordinary spring water.

Chemical Properties.—The following Tables exhibit the chemical properties of the spring; showing the action of various chemical re-agents, the inferences to be drawn from the changes produced by them, and the quantitative analysis *of the water.*

CHEMICAL PROPERTIES OF THE CHALYBEATE SPRING IN A TABULAR FORM.

RE-AGENTS.	CHANGE PRODUCED			INFERENCES.			
	IN THE WATER,		IN THE RESIDUE after evaporation.				
	At ordinary temperature.	When previously exposed to 212°.					
Prolonged exposure to the atmosphere	ferruginous deposit	ochreous deposit		Iron falls down as a hydrated oxide.		Iron combined with carbonic acid.	The presence of iron in effective quantity.*
Exposure to a boiling heat							
Solution of pure tannin	a puce colour	no effect..					
Tincture of galls	a purplish black colour	ditto			Carbonic acid the only solvent.		
Ferricyanide of potassium	a light blue colour	,,		Iron present as a protoxide.			
Sulphocyanide of ditto	a red colour	,,					
Infusion of tea	a purplish lilac colour						
Ditto of coffee	a dark olive colour						
Tincture of litmus	a light pinkish red colour	none		Free carbonic acid gas present.			
Turmeric paper	none			The absence of an alkaline carbonate.			
Syrup of violets	a green colour			The presence of an earthy carbonate.			
Oxalate of ammonia	becomes turbid			The presence of lime.			
Chloride of barium	a slight cloudiness			The presence of combined sulphuric acid.			
Nitrate of silver	a bluish white at first, then a reddish brown precipitate			The presence of combined hydrochloric acid.			
Alcoholic solution of soap	slight opalescence			Of a very soft quality.			
Boiled with red oxide of lead and nitric acid			lilac hue	The presence of manganese.			
Ter-chloride of gold	none			Absence of organic matter.			

* This last brace has reference chiefly to the second column; the preceding brace has reference principally to the third column; the others bein g placed as near as possible to their correlatives.

car- il a illed nically ritating with the gaseous acid of Tunbridge

onsider, first, the subsequently their ce.

water, is essential to hs of the weight of the pervading all structures, parts of the frame, depositing. matter, &c. It repairs the blood from secretion, &c. It is ting without causing excitement. and assimilation, by maintaining the without exhausting its vigour, and by substances; and it probably co-operates by giving up its elements to supply the tem. The celebrated Hoffman remarks productions of nature or art, water comes universal remedy, so much sought for by ever hitherto discovered." Thus we find how spring may become a powerful hygiènic and

another important constituent of the lly stimulates the mucous membrane of tes digestion by increasing the secretion

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te of manganese probably exerts a slightly alter- tion; but its effects are insignificant in comparison rbonate of iron.

There are contained in half a wine pint about—

		Grains.
Protoxide of iron		0.13
Chlorides of	calcium	0.09
	magnesium	0.02
	sodium	0.08
Sulphate of soda		0.0[illegible]
Carbonate of lime		0.02
Oxide of manganese		0.03
Alumina, Silica, &c.	minute portions	

And of—

	Cubic inch.
Carbonic acid gas	0.50
Nitrogen	0.17
Atmospheric air	0.17

In an imperial gallon of solid contents:—

		Grains.
Protoxide of iron		2.520
Chlorides of	calcium	1.848
	magnesium	0.348
	sodium	1.500
Sulphate of soda		1.764
Carbonate of lime		0.324
Oxide of manganese		0.745
Alumina, Silica, &c.	traces	
Loss in processes		0.156
		9.205

	Cubic inches.
Carbonic acid gas	9.66
Oxygen ditto	0.60
Nitrogen ditto	5.70
Gaseous constituents of the imperial gallon	15.96

The water, at its natural temperature, contains of—

	Cubic inches.
Carbonic acid gas	9.66
When heated to 114°	7.58
Loss by heat	2.08

The remarkable purity of the water assists the carbonic acid gas in perfectly dissolving the protoxide of iron. To its freedom from all other saline constituents*—for the minute quantities existing can exert but little influence — may be attributed the lengthened reputation of the spring, presenting as it does an unique instance of what are termed "Pure carbonated chalybeate waters." Very seldom indeed will a spring be found which is at once almost as pure as distilled water, of a uniform temperature, charged and chemically combined with effective, because gradual and unirritating doses of the most potent ferruginous compound—with the additional advantage of a gratefully stimulating gaseous acid —like that of the long and justly prized waters of Tunbridge Wells.

MEDICINAL PROPERTIES. — We may consider, first, the action of each of its ingredients, and subsequently their combined influence, on the human frame.

The basis of the spring, namely, the water, is essential to our existence; it forms nearly four-fifths of the weight of the body, of its fluid and solid parts; pervading all structures, conveying nourishment to all parts of the frame, depositing, separating, carrying away useless matter, &c. It repairs the loss of the fluid part of the blood from secretion, &c. It is a vital stimulant, supporting without causing excitement. Water aids digestion and assimilation, by maintaining the tone of the stomach without exhausting its vigour, and by dissolving alimentary substances; and it probably co-operates directly in nutrition, by giving up its elements to supply the wants of the system. The celebrated Hoffman remarks, "that, of all the productions of nature or art, water comes nearest to that universal remedy, so much sought for by mankind, but never hitherto discovered." Thus we find how the basis of the spring may become a powerful hygiènic and curative agent.

Carbonic acid gas, another important constituent of the mineral water, gently stimulates the mucous membrane of the stomach, promotes digestion by increasing the secretion of the gastric juice, strengthens the circulation, regulating and otherwise beneficially influencing various functions, the healthy action of which is essential to the well-being of the system. It moderately excites the organic nervous system, and the brain through the nerves of the stomach, cheering and exhilarating the animal spirits.

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* The bi-carbonate of manganese probably exerts a slightly alterative and tonic action; but its effects are insignificant in comparison with the proto-carbonate of iron.

Carbonic acid increases the activity of saline substances, chiefly by assisting the water in perfectly dissolving them; thus effecting, in cold mineral waters, that which increase of temperature produces in thermal springs. But it is by co-operating with the next and most important ingredient of the chalybeate spring, that this gaseous acid evinces its peculiar action.

The metal iron exists in the spring, as we have seen, in the state of protoxide combined with carbonic acid. The researches of Baron Liebig lead to the conclusion, that protocarbonate of iron plays an essential part in the important function of respiration. There are many other effects consequent to this; it increases the red particles of the blood, stimulates a languid circulation, augments the animal heat, and strengthens the digestive, nutritive, muscular, and nervous systems generally, aiding in the growth and repair of the body, and in removing the deteriorated tissues. Iron exerts a specially beneficial action on the digestive organs, exciting into activity the muscular fibres and nerves of the alimentary tube. It increases the secretions when defective, and otherwise corrects them if out of order. In short, iron strengthens and invigorates all the functions of organic or animal life.

Having thus considered the action of each ingredient of the Tunbridge* chalybeate on the system, we shall proceed to notice the collective action of its constituents. The water, when received into the stomach, produces a slight shock to its nervous expansion; the tissues of the part are constringed, and the circulating fluid recedes. These changes are accompanied by a slight sense of chill: re-action soon follows, accompanied with an agreeable sense of warmth and buoyancy becoming diffused over the system; the circulation is accelerated; the nervous system strengthened, and a feeling of energetic activity rapidly imparted to the whole frame; the appetite is improved; the kidneys are stimulated to activity; and, if brisk exercise be taken, the cutaneous exhalation considerably augmented, especially if the temperature of the water be raised. The water promotes the alvine excretions, if the bowels have been previously disordered from foul accumulations; otherwise no action ensues, except a blackened appearance of the alvine discharge, evincing the change produced on the intestinal secretions by the iron, which need not alarm.

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* To avoid repetition, the term "Wells" is occasionally omitted; it will be understood, however, that by Tunbridge is meant Tunbridge Wells.

Medical practitioners seldom meet with cases more difficult to treat than those, of constant occurrence, in which strengthening measures are urgently required, and yet in which the digestive organs and nervous system are in a morbidly sensitive condition, little tolerating ordinary doses of tonic medicines. It is in such cases especially that this really admirable compound exerts a curative action, unequalled by any artificial preparation of iron. The iron is, as it were, surreptitiously introduced into the circulation; the purity and coolness of the water, together with the gently stimulating effects of the carbonic acid gas on the alimentary canal, admirably co-operating to re-establish the tone of the frame without producing irritation. If a proper selection of such cases be made, and all other essentials duly observed, the invalid will gratefully acknowledge the happy change wrought on a feeble system by the chalybeate.

Not unfrequently, soon after commencing the waters, some disagreeable sensations arise;—vertigo, headache, drowsiness, flushed face, and a sense of tension about the head, with bleeding from the nose; and distension, flatulence or pain at the stomach. These unpleasant feelings soon subside, if the case be properly adapted for the use of the waters, and all other necessary rules duly observed.

Sussex Spring.—The spring to the rear of the Sussex Hotel is agreeably situated in a picturesque dell, approached by a pathway winding through grounds which are very capable of tasteful arrangement. An examination on the 21st January, 1847, exhibited the following results:—It had a temperature of 45° Fahrenheit, that of the atmosphere being 36°. The quantity of water yielded in a minute exceeded six pints (imperial measure). Its specific gravity was 1.0007. The water was perfectly clear, and had a well-marked styptic taste; being ingested, no eructation followed. When exposed for two hours to the atmosphere at 50°, a few gas bubbles were observed adhering to the bottom and sides of the vessel, and a very thin pearl-white pellicle appeared floating on the surface. After ten hours, the liquid became slightly opaque; increasing to a brown turbidness in twenty-four hours. After thirty-six hours, a fawn-coloured deposit ensued; the pellicle having become thickened and glistening. The precipitation was completed in three days, the supernatant liquid being now transparent.

A phial filled with the water, and sealed, remained unaltered for several days.

On raising the temperature of the water to 55°, gas bubbles escaped, increasing as the temperature advanced. At 98° the water appeared slightly opaline; assuming at 120° a brownish colour; from this point to 212° the liquid deposited brown flocks, and became transparent. The effects of reagents on this water were so similar to those mentioned at page 9, as not to require further notice; the inferences are, of course, of a like kind.

An imperial gallon gave, on evaporation,

1.10 grs. peroxide, equal to 0.99 protoxide of iron.
8.25 grs. saline residue.

The saline residue consisted of chlorides of sodium, magnesium, and calcium; sulphate of soda; carbonate of lime; with traces of alumina, silica, oxide of manganese, and vegetable fibre. The amount of carbonic acid gas very slightly exceeded that required for holding in solution some of the above ingredients.

This analysis represents the spring to be nearly identical with that of the Parade; differing slightly, from the increased proportion of iron and carbonic acid gas contained in the latter, from the Sussex Spring resisting heat to a less exetnt, as well as from its being remarkably free of alkaline or earthy salts. This spring, when aërated, forms a light and agreeable tonic, and is likely to prove an efficacious remedy in those cases where effervescing chalybeate waters of moderate strength are to be recommended.

It is unnecessary here to advert to what has been said previously respecting the influence of carbonic acid gas in powerfully promoting all the good effects of iron, except to remark that the Bruckenaur of Germany—the counterpart of Tunbridge Wells—excels the latter only in the greater amount of this gas contained in the water, and is inferior in the proportion of iron present. The Sussex Spring, when charged with carbonic acid gas, nearly represents the Bruckenaur of the Continent.* The efficient manner in which Mr. Gorringe has carried out the project of charging the chalybeate waters of this town with carbonic acid gas, reflects on him the greatest credit. His energetic exertions are deserving of every success, being calculated to produce lasting benefit to Tunbridge Wells. Mr. Gorringe has made arrangements with Mr. Slater, the enterprising proprietor of the Royal Victoria and Sussex Hotel, which will admit of every adjunct required in conducting a Pump-room establishment, not omitting the attendance of a band of musicians.

* The Bruckenaur consists of—

	Grains.
Chloride of sodium	0.021
Sulphate of soda	1.121
Carbonate of lime	0.808
Sulphate of magnesia	0.082
Carbonate of ditto	0.050
Silica	0.036
Protoxide of iron	0.255
	2.373

in 16 ounces of water, with 36½ cubic inches of carbonic acid gas. It has a temperature of 51° Fahr.

The period selected for drinking the waters—the forenoon—is most appropriate, and will considerably enhance the many advantages now for the first time afforded to the visitors of Tunbridge Wells.

SECOND SECTION.

COMPLAINTS BENEFITED BY THE MINERAL SPRINGS.

The following brief sketch of the disordered states of the human economy is not by any means intended to include all those in which chalybeates might be used with benefit. Neither is it meant to supply the place of judicious medical advice, without which a correct adaptation of the waters of Tunbridge Wells to any particular case would be unattainable in very many instances: the professional eye alone can detect those undefined lineaments of disorder, *apparently* similar, but in reality acknowledging very *different* causes, diametrically *opposite* in their nature, and amenable to very *different* remedial treatment. Nor must it be supposed, that the use of the water will, without fail, remove those maladies in which it is applicable, without other not less essential measures be, at the same time, accurately and perseveringly followed. Still, the characteristic features of some aberrations from health, about to be mentioned, may serve as a general guide in the adaptation of the chalybeate to any individual case.

As a general indication, it may be stated, that the waters are useful in disorders occurring in constitutions which partake of the lymphatic temperament, characterized by light complexion, white or sandy hair, bluish grey eyes, eyebrows and eyelashes inclined to white, circulation languid, the frame often large, muscles large but deficient in strength, a disposition to indolence and inexertion, the temper unmoved. It will be found that the depraved states of the system presently noticed originate in, or are grafted upon, constitutions thus marked, more frequently than in any other temperament. The nervous temperament occurs next in frequency; it is more immediately characterized by the circulation being easily excitable, without power; the pulse frequent and weak; the action of the heart unequal, easily affected; strength and weakness equally exaggerated, tending to exhaust, and use its resources with waste of nervous power; the sensibility acute; the general deportment variable; proclivity to nervous disorders. The HABIT of body most constantly accompanying those temperaments in which iron is indicated, is a spare and relaxed condition, the result of excess, exhaustion, anxiety, mental depression and distress.

Debility—a depressed state of the vital energy of a part or of the whole frame—is the most distinctive character of many, if not all, of the disordered states we shall briefly notice; but, as it accompanies other conditions of the system in which tonics would prove most injurious, we must carefully distinguish those forms of debility in which the chalybeate is indicated. Primary debility arises from direct loss of power consequent to deficient nourishment, severe loss of blood, &c. It is characterized by pure atony, not arising from febrile irritation, or inflammatory action, in any organ; exhaustion; languor; cool skin; pale and moist tongue. Here the chalybeate is most applicable. Secondary or indirect debility arises where previous excitement leaves the system, or any organ, in an exhausted and irritable condition. If the irritation existing be accompanied with dilated and engorged vessels, the chalybeate will test the stage of irritation; if a *mere sequel* of excitement, the waters will remove these conditions, equalizing and strengthening the circulation; but if excessive sensibility be present, pain and febrile disturbance will result. Relative debility exists when an undue distribution of power takes place—one part being in an excited state; another, related to the former, in a weakened condition—producing impairment of function and sympathetic disturbances. Here, provided there be not an *excess* of function from *vascular excitement* approaching to *inflammatory* action, in the part primarily affected, the use of the chalybeate is indicated.

ANÆMIA—a state of the vascular system, where the blood is deficient—is another condition present more or less in all the maladies about to be noticed; a minute account of which will not therefore be required, as their most characteristic features will be found comprised in the symptoms of anæmia. This state is denoted by puffiness of the face; general pallor of the *skin, gums,* and *lining membrane of the mouth*; the *tongue* being *white,* or rather *pallid*; the stomach deranged and often excessively irritable; the extremities cold; debility; palpitation of the heart, with difficult breathing and fatigue on slight exertion; faintings; headache of a fixed character; the pulse thready, quick, and easily accelerated; the secretions and excretions for the most part scanty; the bowels torpid; the spirits depressed, various nervous affections being present, the mind easily agitated, the memory defective, vision indistinct. Anæmia may also be *local,* the signs of which are more equivocal; its existence must be inferred from the local disorder of function; from the sympathetic attendants of local anæmia. These again require interpretation by signs taken from the general condition of the system, by the absence of evidence of an opposite state, by the mode of production, and by the effects of remedies. These distinctions are important, as it is only in the true anæmial condition that the chalybeate is admissible. The symptoms marked above in italics may always be relied upon as indicative of general anæmia, in which iron is most beneficial; and it is equally useful when general anæmia, corresponding with primary debility, and arising from loss of blood, exhausting discharges, &c., is of recent date. But when this state is of long continuance, the organs become deeply modified, the fluids vitiated, and a general cachectic condition of the system supervenes. This state is denoted by the sallow and dusky countenance—not *mere pallor,* and by the depraved character of the secretions and excretions: hence the anæmic condition is only a part of the disease, which often proves most intractable under any treatment. If the vital powers be greatly depressed, the blood and humours extremely vitiated, the nervous system almost prostrate, steel would only hasten the inevitable event. Again, if organic lesion has resulted, iron would be injurious; excepting cancerous disease of the uterus, in which severe loss of blood produces anæmia; here it will often produce the best effects. The signs of *local* anæmia, as previously mentioned, are much more obscure; as in *relative debility*, so also in cases of local or relative anæmia, resulting from undue accumulation of blood in an associated organ, the chalybeate must be had recourse to with much discrimination.

Having premised these general remarks—from which may be perceived the necessity of attending to the *form*, *stage*, and *course* of disease—we shall be enabled to judge more clearly of the varieties of each malady amenable to strengthening measures.

The class of complaints receiving most benefit from the Tunbridge Spa, are those peculiar to the female constitution; and certainly a fitter theatre could not be imagined, much less realized, upon which to display the inherent power of any remedy, assisted—enhanced by all the natural advantages of this pre-eminently favoured locality, where a happy union of three of the imaginary elements of the ancients—earth, air, and water—conspires in effecting that fortunate consummation so ardently hoped for,—restored health, a blessing never sufficiently prized, until we feel the withering hand of disease upon us.

Retention, suspension, or irregularity of the uterine functions takes place in two diametrically opposite conditions of the system; one attended with the appearance of superabundant circulation, the other with constitutional debility. To this latter form the subsequent remarks are alone applicable. This form is characterized by pale features; coldness of the extremities; a small, weak, and easily accelerated pulse; quick walking being soon followed by breathlessness, with great proclivity to fatigue; the mind being sluggish; the spirits low and depressed; the body emaciated; the appetite failing;—in short, the constitutional symptoms are those of anæmia previously noticed. The periodic indisposition has never appeared; or it gradually diminishes, is defective in quantity and colour, and, becoming irregular, eventually ceases. When either state has continued for some time, it merges into CHLOROSIS, characterized by a waxen or cadaverous complexion; the upper eyelids being brown, the lower lead-coloured; the skin harsh and dry, assuming a bilious tinge; the appetite depraved; the bowels irregular; the senses morbidly excitable; the breath being fœtid, with rough and fissured tongue; œdema of the lower extremities in the evening, and of the face in the morning; the breathing hurried on the slightest exertion; the secretions all deviating more widely from their natural character; in short, most of the symptoms indicative of a cachectic state of the system are present. This malady—green-sickness, as it has been termed—is intermediate between cachexia and anæmia; the blood being not only less in quantity, but very much altered in quality, containing less of the red globules and of other solid materials;* so that no organ escapes from much functional derangement.

Accompanying this morbid state, are many local complaints, which, to save repetition, may be here noticed, as they mostly arise from primary derangement of the sanguifying process, attending the retained, suppressed, or altered periodic function. There are symptoms resembling *inflammation of the brain*, characterized by violent throbbing

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* The following analysis of the blood in Chlorosis, by Herberger, *before* and *after* six weeks exhibition of chalybeates, clearly shows this alteration :—

	Before.	After.
Water . . .	868.3 .	867.0
Solids . . .	131.6 .	192.9
Fibrin . .	3.6 .	1.9
Fat . . .	2.3 .	2.4
Albumen . .	78.2 .	81.5
Red-globules . . .	36.4 .	94.2
Hæmatin . . .	1.5 .	4.0
Extractive matter, and salts .	8.9 .	8.2
	1000.0 parts.	1000.0 parts.

headache, and exalted sensibility, with delirium. When less in degree, this state is attended with less urgent symptoms, the patient usually supposing the existence of "a flow of blood to the head," which *seems* correct by such symptoms being present as, headache, weight and coldness in the head, giddiness, dimness of sight, with moats floating before the eyes; rustling noises in the ear; throbbing of the temporal arteries; confusion of thought, and impaired memory. But this state depends on debility: it is recognized by pallidity; loss of flesh, and muscular flabbiness; the pulse being weak and small, but easily excited; headache, occupying the back of the head chiefly; and by most of the symptoms of anæmia previously noticed. The lowest degree of this state forms the constant headache of chlorotic females, arising from passive congestion: the *sympathetic* headache, often confined to a small spot on the crown of the head, is but a variety of the latter. Symptoms resembling *pleurisy* or *inflammation of the lungs*, cough, pain in the side, difficulty of breathing, are not unusually present. *Nervous palpitation*, simulating that accompanying disease of the heart. Disorders of the *digestive organs*; depraved appetite, flatulent distension of the intestines, simulating pregnancy. Symptoms resembling *abdominal inflammation*; exquisite tenderness on slight pressure. Affections of the nervous system; hysterical convulsions, chorea, epilepsy, partial paralysis. Affections of the windpipe and bronchial tubes, with loss of voice, or intermittent asthmatic attacks. Painful affections of the *joints*. Various *mental* emotions. Such are the maladies occasionally associated with the condition of the system, and functional derangement of the uterus, above sketched; but the limits within which this little work is necessarily confined, prevent a detailed account. There is, however, one other condition, mostly connected with chlorosis, well deserving of notice, from its being not unfrequently confounded with a plethoric habit of body: an overloaded state of the vascular system does indeed exist, but it is the plethora of debility, arising from the circulation of too large a quantity of impoverished blood, in which, though depletion may be rarely—very rarely

—called for, a chalybeate, in conjunction with other medicinal and hygiènic remedies, will restore the circulating fluid to its healthy state. In this condition, the head symptoms sketched above are well marked, attended with heavy sleep, and somnolency in the day. The countenance is of a pale rosy colour, tumid, and frequently glistening; the pulse not so depressed as in the preceding variety. Heat and throbbing at the chest are occasionally present, and a disposition to bleeding from the nose or lungs often attends. The strength is not so much diminished, nor the fatigue from exercise so oppressive.

The most superficial glance at the preceding outline will suggest, how vain would be the hope to remove such a formidable array of symptoms by any single remedy. In vain will the invalid resort to Tunbridge Wells, unless the greatest attention be given to remove or counteract any known causes which may have originated or aggravated this depraved condition of the system, and the requisite dietetic and regimenal measures be observed faithfully and with untiring perseverance.

The causes of this state are various and widely diffused. Not unfrequently the malady is attributable to original delicacy of constitution, from hereditary transmission, which would seem, according to the recent researches of M. Lugol, to have a wider range in the production of disease than has been previously supposed. But one of the most fruitful sources of constitutional debility is undoubtedly attributable to the pernicious systems of education hitherto pursued; by which the intellectual and sensual faculties are respectively strained and fostered to their utmost extent, often to the neglect or inadequate observance of the all-important essentials conducive to a sound and healthy organization. To what purpose, it may be inquired, are the mental powers cultivated, if our material organization be not in a state to bear with fortitude the many inimical assaults from extrinsic sources, which all have to endure? or to what purpose a highly endowed understanding, if obliged to inhabit and accompany the sad and sickly frame, perpetually obtruding its pains and sufferings, to an untimely, but perhaps not unwelcome grave?

It is to be hoped, that the spirit of inquiry now abroad will soon convince a discerning public of the erroneous notions hitherto very prevalent on mental and physical education: and will lead those who are intrusted with the care of juvenile, especially of female education, to the adoption of such a course of mental culture, as will not obstruct the healthy development of the several corporeal functions, upon which so much of the future welfare of their pupils depends. Neither should parents be too solicitous for the premature unfolding of faculties, which, without bodily strength, would prove the bane of existence, by fostering a morbid sensibility—the immediate source of those distressing sensations to which the female organization is exposed.

A few more of the most common causes of constitutional debility may be enumerated:—blood-letting, practised for inflammatory complaints; some uterine affections subsequently mentioned; exhausting discharges of any kind: insufficient nutriment, especially of animal food; neglect of sufficient exercise, and the injurious influence of close and ill-ventilated apartments; inadequate clothing; immoderate use of medicine; convalescence from severe diseases; a residence in a moist, cold, and otherwise unhealthy locality.

The invalid must endeavour to remove or counteract these noxious sources of disease; returning health will soon follow a rigid observance of a suitable regimen:—Early hours; plenty of fresh air; exercise on horseback, if the strength permit, not continued so long as to fatigue or waste the powers of the system; light and digestible animal food; a moderate use of wine in some cases, as madeira or sherry; the shower-bath, gradually reducing the temperature from tepid to cold water, the feet being put into hot water: where considerable debility exists, sponging the surface over with tepid or cold water, successively sponging and wiping with a coarse towel different parts, will be sufficient. The Tunbridge chalybeate, taken according to the directions subsequently given, will often prove a powerful and effectual auxiliary. Where the malady is deeply rooted, and assumes the graver character of chlorosis, medical supervision will be indispensable.

In using the waters for suppression or irregularity of the periodic flow, the invalid must be quite satisfied that this indisposition does not arise from local irritation, congestion, or inflammatory action, from mechanical impediment, or from organic disease. The pain occasionally caused by the chalybeate water need not alarm, as, in general, it may be considered a sign of recovery — provided the case be adapted for chalybeates. Dr. J. Johnson observes, when comparing Bruckenau in Germany with Tunbridge Wells: "The water of Bruckenau, like all pure tonics, is a powerful engine in skilful hands; but a dangerous weapon when wielded without judgment. Debility, or at least a *feeling* of debility, attends almost every disease, whether acute or chronic. To remove this symptom, is the constant prayer of the patient, and the great embarrassment of the practitioner, who knows that those remedies which augment the general strength *too often increase the activity and danger of the local disorder.* The attempt to restore general health or strength by tonics or chalybeates, when there exists a local disorder of any organ or structure, is not merely *illusory*, but prejudicial, or even *dangerous.*"*

If the characteristic signs sketched above be carefully noted and discriminated, the invalid may proceed with confidence in the use of the waters; but in all obscure cases, medical advice will be requisite.

We proceed to notice briefly other uterine affections, in which the Tunbridge chalybeate will act beneficially.

Painful periodic indisposition, characterized by tenderness on pressure; pain, neuralgic, darting or fixed, for the most part remittent; irritability of the stomach and intestines; the nervous system being occasionally much deranged, fainting, or hysteric convulsions occurring.

In the *interval* of the periodic indisposition, the chalybeate will be found most appropriate, in conjunction with the observance of proper diet and regimen; avoiding, as far as possible, any source of mental anxiety, undue excitement of the nervous system, or other exciting causes. If the circulation be much accelerated, preparatory measures will be required previous to commencing the waters; but if the case exhibit the neuralgic form, and the anæmic condition alone be present, no other medicinal auxiliary will be required.

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* Pilgrimages to the Spas, p. 181.

Excessive periodic flow—the quantity being disproportionate to the powers of the invalid—mostly occurs in persons of a nervous, or lymphatic temperament; the former is more immediately denoted (in addition to the characteristics previously noticed) by a ready excitability of disposition, rapidity of muscular movement, with a thin and pallid surface; the latter is marked by a florid and bulky habit, but the strength not being in proportion, fatigue easily induced, the circulation readily impeded, fainting occurring with facility, and the periodic indisposition producing much exhaustion. In endeavouring to remove this condition of the system, the causes more immediately connected with its production,—viz., heated rooms, too warm clothing, tight lacing, ***mental emotion***, prolonged lactation, &c.,—must be carefully sought after, and avoided if possible. During the period of active flow, rest must be enjoined in the horizontal posture; a cool and unexciting diet enforced; and proper medical treatment had recourse to, if seriously indisposed. In the interval, horse exercise must be avoided: walking gently, or taking an occasional drive in an open carriage; the use of the shower-bath, or a cold hip-bath, night and morning, for a few seconds; and all other dietetic and regimenal rules, calculated to restore and strengthen the system, being observed. The chalybeate will have an excellent effect in bringing about a desirable state, if used in this malady, when not arising from local organic disease, or mechanical impediment to the circulation from disease of the heart or lungs; when all the functions are tardily performed, the pulse being feeble and rapid, attended with a low febrile state of the system, the digestion imperfect, the face and lips pale. From the minute quantity of iron present, the water will peculiarly suit those of nervous temperament, above sketched; in conjunction, occasionally, with the local application of a few leeches.

A disordered state termed *irritable womb*, is another of the maladies peculiar to females requiring treatment by chalybeates. It is characterized by severe pain more or less constant, aggravated at the periodic visitation; and by the disordered condition of the system usually attending such complaints; its symptoms are stationary; it has but little disposition to advance to disorganization. It may be distinguished from inflammatory affections of the same part, by the absence of enlargement, heat, and throbbing in the organ; by the suffering being intense in proportion to the slight alteration of texture, and by the nervous temperament of the invalid. Close confinement, and rest in the supine posture, must be enjoined during the periodic visitation; purgative medicines must be avoided during the interval; at which time, a generous diet, being as much in the open air as possible, avoiding all causes likely to aggravate or increase the malady, together with a persevering use of the waters, will prove most effectual in removing this not uncommon and very distressing complaint.

The condition of the uterine system termed FLUOR ALBUS, will derive considerable advantage from the Tunbridge chalybeate; when connected with a debilitated state of the system, and with local relaxation, of long duration, and when not attended by obstructed circulation, or organic change in remote or adjacent parts. Auxiliary medical treatment will occasionally required, together with an unstimulating and nourishing diet; the necessary regimen being strictly followed.

When ABORTION, or STERILITY, arises from a similar state to that just noticed—local or constitutional, the Tunbridge Spa has long been celebrated for its happy effects. It is likewise useful in cases in which debility succeeds parturition, attended with excessive loss of blood; also when the constitutional peculiarities, marking either sex, are slowly or imperfectly developed.

In concluding this notice of affections peculiar to the female organization, it will not be superfluous to reiterate the caution required, to see well to the suitability of the chalybeate water to any particular case, before using it; and to repeat, that it is only in *functional* disease of the uterine system, when unattended with any appreciable alteration of tissue, from vascular excitement, or increased action leading to structural change, that the chalybeate is indicated. If a mere sequel of previous excitement,—*without* a point of irritation being left behind, causing determination of fluids, and increased sensibility,—the indirect debility resulting will readily admit of removal by a well-conducted course of the Spa. Exceptions to these remarks—as in the instance just mentioned, uterine irritation, requiring local depletion by leeches in conjunction with the chalybeate, if used at all, and a few others previously mentioned—very seldom occur.

We could cite many cases that have fallen under our notice during fifteen years' professional experience, in which chalybeates produced the most untoward consequences, from their injudicious application to maladies of the uterine system requiring very different treatment. But we have dilated on this subject—as far as our limits would permit—to the extent required to detect appropriate cases for the exhibition of chalybeates. We shall now merely observe, that having dwelt almost exclusively on the positive indications for their use, it may be inferred that in conditions of system contrary to those sketched the water would be prejudicial: to describe the characteristic symptoms of the opposite states, would be totally incompatible with the limited extent of this little work. These remarks will apply to the disorders subsequently mentioned.

We next proceed to notice, briefly, those *disorders of the digestive organs*, which have been found to receive much benefit from the chalybeate water.

ATONIC DYSPEPSIA, one variety of *functional dyspepsia*, is that in which the Spa is most beneficial. It arises from deficiency of nervous influence, and loss of tone, in the muscular coat of the stomach. Dr. Symonds remarks, that "gentle agitation of the food, its easy solution, and gradual propulsion to the smaller end of the stomach, are the chief requisites for healthy digestion; and it is therefore obvious, that changes in the gastric secretion, and irregular contraction or weakness of the muscular coat, may, together or singly, so disturb the process as to give rise to the symptoms of dyspepsia. One of the most likely circumstances to produce deficiency of the gastric juice, is an *anæmial* condition of the mucous membrane;" this may arise, directly or indirectly, from debility. Again, deficient nervous influence, by impairing the gastric juice, plays a conspicuous part in causing indigestion: this view is confirmed by the distressing effects of all causes tending to exhaust the nervous energy, among which mental emotions are very prominent. This variety of indigestion is characterized by a languid circulation, as shewn by pallor of the countenance; coldness over the region of the stomach; copious and pale urine; weak pulse; great depression of strength, and general chilliness of the surface; the tongue being pallid, with a white thin fur, occasionally adhering to the finger when applied to it: loss of appetite, and nausea, attend. Various disagreeable sensations exist in the stomach, as a feeling of weight, heartburn, and eructation after food; the bowels being mostly confined. This variety of indigestion is distinguished from organic dyspepsia, the result of a congested or inflammatory condition of the mucous membrane, by negative more than by positive characters—no increase of pain following the use of stimulants or hot drinks—the absence of pain on pressure over the stomach—the tongue not being red, papillated, dry, or beset with small aphthous points, smooth, shining, or contracted—the absence of a harsh or scaly condition of the skin—cold drinks not particularly mitigating uneasy sensations—little disposition to eject a large quantity of mucous fluid or food *immediately* after meals; all which symptoms, when present, denote a state of the mucous membrane of the digestive apparatus, where the chalybeate would only aggravate the existing indisposition. I may here briefly notice another variety of functional dyspepsia, namely, Nervous Dyspepsia, the characteristic symptons of which have been ably pointed out by Sir J. Clark. It occurs, like atonic indigestion, in persons of nervous temperament, and is attended with many symptoms of the latter, but morbid sensibility of the nerves of the mucous surface of the stomach being the most prominent condition. It is of the utmost importance to distinguish this variety from the inflammatory dyspepsia above mentioned, as it requires a very different treatment, remedial and hygiènic. For brevity, I shall mention conjointly the distinguishing characters of each, in addition to those pre*viously stated.*

IN NERVOUS DYSPEPSIA.	IN ORGANIC DYSPEPSIA.
The symptoms are not constant, recurring occasionally without appreciable causes.	The symptoms are more permanent.
They are more affected by causes acting through the nervous system; as, mental emotions, and changes of weather.	There are greater irritability of disposition and mental despondency.
The pulse is but little changed; occasionally it is slower than usual, and without fever.	The pulse is contracted and quickened, especially after meals and towards night, with fever.
Headache is generally preceded by coldness, creeping of the surface, or numbness in the extremities; the pain being intense and throbbing, affecting one side; it is observed more on awaking in the morning, appears more frequently when the stomach is empty, than after meals; and is attended with nausea, insipid taste, and clammy tongue; long fasting, and over-exertion, more frequently inducing it.	Headache is not preceded by coldness, but heat of the hands, feet, and flushing of the face; the pain being acute, with a sense of distension: it often terminates by vomiting; and occurs chiefly in the evening, or during the process of digestion. Acerbity of the saliva, and more frequent thirst.
Flatulence, giddiness, noises in the ears, deafness, dimness of sight, commonly attend.	Sensations of heat, nausea, and vomiting are common; pain not severe, seldom felt when the stomach is empty.
Tongue, gums, and mucous membrane of the mouth pale—seldom dry.	The tongue as previously described; the gums red and spongy, and the mucous membrane of the mouth beset with small aphthous ulcers.
	The eyes and eyelids are subject to inflammation.
The urine is pale and copious.	The urine is high-coloured and turbid.
Solids more easily digested; relieved by tonics and anodyne treatment.	Liquids more easily digested; relieved by antiphlogistic treatment.

Such are the principal varieties of indigestion; but, of the above, it is only in the atonic or nervous dyspepsia that the chalybeate is admissible. Indigestion, when protracted, becomes complicated with that distemper levelling the moral with the physical world,—hypochondriasis, the last expression of dyspepsia and mental prostration. It must be acknowledged, however, that the preceding distinctions are occasionally recognized with difficulty; and, not unfrequently, cases of an intermediate nature occur—when one form is about to merge into another, or where the congested mucous membrane is directly consequent to insufficient organic nervous influence—in which the chalybeate spring will prove very beneficial, especially as the water, from its temperature, and the quantity used, may be supposed to exercise a sedative action on the slighter grades of vascular excitement or congestion.

It will be to little purpose that any single curative agent is used, if the dyspeptic do not attend most carefully to those restrictions which his case may require; the old maxim, "*causa cessante, effectus cessat,*" must never be lost sight of, in all matters pertaining to the causes exciting or perpetuating the malady; and if the invalid will resolutely and perseveringly follow such a course as shall strengthen his constitution, returning health will convince him, that ephemeral pleasures do not, for a moment, admit of comparison with the abiding sense of well-being, which is alone compatible with sound digestion. The more common causes of dyspepsia are those circumstances which tend to lower the nervous energy; as, long illness, loss of blood, exhausting discharges of any kind, innutritious food, a damp or unwholesome atmosphere, broken rest, luxurious and indolent habits, to the neglect of proper exercise; irregularity as to the times of taking food, its quality, and (not least) to the quantity ingested—

> "The stomach crammed with every dish,—
> A tomb of roast and boiled, and flesh and fish;
> Where bile and wind, and phlegm and acid, jar;
> And all the man is one intestine war."

To these causes may be added—stimulating and purgative medicines, taken with the object of counteracting erroneous diet; the abuse of tea, coffee, or tobacco; mental and moral causes, as, too close application to business or study, domestic chagrin, anxiety, &c. The invalid must keep regular hours; rise early; take sufficient exercise; use a light and nutritious diet; employ a shower bath of such a temperature as will insure a gentle re-action, or sponge the surface over, drying it with a coarse towel: occasional aperients will be required. If to these means be added the Tunbridge chalybeate, taken for a sufficient length of time, the best effects may be anticipated.

Strumous Dyspepsia is another variety well deserving of attention, as it is often a forerunner of tubercular consumption. The symptoms occur in early life. It is characterized by a fretful disposition; irregular appetite; coated tongue, which is beset with red points at the tip and edges; tumid belly; unhealthy alvine evacuations; lassitude; flaccidity of the muscles; disposition to swelling of the tonsils; and chilblains. Here, proper medical treatment may prevent the development of that most devastating malady of our climate,—pulmonary consumption; the waters will prove very beneficial, with attention to diet, &c., when the state of the alimentary canal permits.

Spasmodic Stricture of the Rectum, simulating permanent disease of the same part, is deserving of attention. It generally occurs in those of a nervous or hysterical habit, and in early life; it arises from undue excitability of the nervous system, and alternates with similar affections in other parts. The cold hip-bath, a mild diet with attention to the general health, suitable medical treatment, and a course of the mineral water, will prove serviceable.

Other diseases of the abdominal viscera,—engorgement of the liver, spleen, &c., or irritability of the alimentary mucous membrane, not occurring in persons of febrile or irritable temperament, will receive benefit from the chalybeate, if a course of resolvent mineral waters be used previously, as those of Ems, Carlsbad, Cheltenham, Leamington, &c. The chalybeate may be used with advantage in alvine fluxes from debility of the mucous coat, in tendency to the formation of worms, and in passive hæmorrhage from the bowels. Sir James Clark observes, with reference to mineral waters, that "they are valuable remedies in chronic disorders of the digestive organs, and will frequently effect cures, after climate and suitable regimen have failed to do more than relieve." The remote derangements connected with affections of the organs of digestion are numerous. Sir James Clark again with truth remarks, "that, unlike many others, these affections are productive of the worst consequences at a distance from their primary seat; and, when neglected or improperly treated, they induce, sooner or later, a train of secondary disorders, which destroy the natural vigour both of the body and the mind; and too often reduce men of the most active, of the kindest, and most enterprising characters, to the most timid, irritable, and helpless of human beings."

In all that class of diseases dependent on a loss of tone in the nervous system, unattended with organic disease, and associated with the anæmic condition, the waters will have an excellent effect:—as in some forms of hysteria, epilepsy, paralysis; neuralgic affections generally; many local complaints attributable to atony of the nervous system; exhausting perspirations; constitutional derangements, with general debility, unattended with local disease or febrile irritation; convalescence from acute diseases attended with protracted debility; certain cutaneous complaints connected with debility of the digestive organs; some forms of gravel, associated with faulty chymification; in cases of chronic gout, with pale tongue, weak pulse, blanched countenance, easily-hurried breathing, and palpitation of the heart on slight exertion; in dropsical affections from disease of the heart, attended with anæmic or a cachectic state of the constitution; and in neuralgic affections of the heart, with a similar state of the system.

The chalybeate may be used with advantage in pulmonary consumption, if no irritation exist in the abdominal organs or alimentary canal; in scrofulous affections, occurring in young subjects of lymphatic temperament, with rickets, distortion, weakness, or other diseases of the joints; where glandular enlargements, or tumid abdomen, are present.

From the preceding pages, it may be inferred in what state of the system, or in what particular disease, the chalybeate water would act prejudicially. I may observe, however, that it is ***contra-indicated*** in persons of the sanguine temperament, or when predisposition to inflammatory disease, hectic fever, acute hæmorrhage, or apoplexy exists; also in acute diseases, those attended with febrile irritation or structural disease in any organ; in cases where an irritable condition of the heart or blood-vessels is present; when the circulating fluid is impure, or superabundant in plastic material or quantity—plethora; where congestive or inflammatory excitement, determining to the head or chest, exists. The water must never be used where an inflammatory condition of the alimentary canal is present; of which the tongue having a red, livid, or glazed appearance, affords a good, though not an invariable indication. Sir James Clark justly remarks,—"Before benefit can be derived from chalybeates, the digestive organs must be free from irritation; otherwise, however great may be the debility, they will generally do harm."* The same may be said of any organ or system of the frame. We repeat—and it cannot be mentioned too often—it is in functional disorder alone, when the general health and strength are giving way, ***unconnected*** with ***vascular excitement*** or ***change of texture***, and when the process of sanguification is ***visibly*** deficient, that iron is indicated.

THIRD SECTION.

GENERAL INSTRUCTIONS FOR INVALIDS USING THE CHALYBEATE WATERS.

SOME of the most essential circumstances to be regarded in connexion with the use of the waters, may be concisely noticed.

It will be advisable for the invalid visiting Tunbridge Wells, to obtain from his medical attendant a brief and clear statement of his case, embracing any peculiarity of constitution, the nature of the complaint, and the treatment previously adopted; so that, should subsequent medical advice be required, an appropriate treatment may be expeditiously and safely adjusted.

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* On Consumption and Scrofula.

As to the time of year most suitable for the use of the chalybeate; from May to November is the period most usually chosen, as well from the greater perfection of the spring in the interval, as from the season admitting of early rising, full advantage of the air, and sufficient exercise. There are exceptions, however—in cases, for example, in which, from a disposition to perspire, exhaustion, or liability to catch cold, would ensue from the requisite exercise being taken; also, when two courses of the water are required;—in such instances, spring and autumn would be more appropriate seasons.

The invalid, having fixed upon a suitable residence—a matter of considerable moment, as many parts of Tunbridge Wells vary much in respect of suitability to particular cases—should allow a few days to elapse before commencing the waters, so as to recover from any fatigue incident to travelling from a distant part.

It is indispensable in every instance, previous to the use of the waters, that the stomach and bowels be in a proper condition; on this will depend, in a great measure, whether the chalybeate prove beneficial or injurious. If the invalid should feel bilious after his journey, he will do well to take a dose of blue pill at night, followed by a saline aperient—as a Seidlitz draught—early next morning, which will remove any crudities, and place the liver (especially when torpid), &c., in a more favourable state for receiving full advantage from the Spa. Aperients must be used previously in every instance, and repeated occasionally, or if the bowels become confined. For those with a tendency to gastric irritation, saline aperients—Pulna water, a Seidlitz draught, Carlsbad salts, Murray's or Dinneford's solution of magnesia—taken early in the morning, will be most suitable. In cases of chlorosis, compound aloëtic pills, at bed time, will be most appropriate.

When considerable debility exists, a glassful of tepid new milk taken half an hour previous to the water, castor oil or confection of senna over-night, lavements of cold or tepid water, of barley-water, or thin gruel, used in the morning, will be most suitable and very beneficial. When there are a furred tongue, heartburn, nausea, disordered bowels, and turbid urine, preparatory medical treatment will be required. The addition of aperients to the water is not advisable, as tending to disagree with the stomach, impede the absorption of the water, and probably to alter its chemical constitution. The stomach must be gradually accustomed to a greater quantity of liquid than usual; a regular diet ebing observed; avoiding late hours, and excess of any kind. More detailed instructions on this subject are given further on.

The most appropriate time for drinking the water is, undoubtedly, in the morning—from seven to eight o'clock. At this time both body and mind are refreshed, and the stomach empty; moreover, from the heat not being oppressive, the necessary exercise can be taken without fatigue or other untoward consequences.

As to the *quantity* of water to be used; this must depend on the age, sex, constitution, nature of the complaint, and the effects produced; the invalid must be guided also by his feelings, drinking such a quantity only as will not oppress the stomach, or impede the requisite absorption of the water. As a general rule, it may be stated, that a smaller glassful is to be taken at first (about 4 oz.); after which, *gentle* exercise for a quarter of an hour, on the Parade, or the Common, when the weather permits, and the walks are dry; otherwise, the sheltered walk within the Piazza will be more suitable. Exercise is very properly insisted upon, as it promotes all the good effects of the Spa; but it must not be carried too far, especially in very nervous or delicate constitutions, for if fatigue be induced, its salutary effects will be in a great measure counteracted. At the expiration of fifteen minutes, another glassful of the water may be taken. Gentle exercise must be again enforced for half an hour or an hour; which interval should always be allowed to elapse previous to taking breakfast or food of any kind; by this practice, the water sits lightly on the stomach, and becomes sooner absorbed. When exercise proves fatiguing, the invalid had better return home in a carriage, and remain quiet until the digestion of the water is completed. The above quantity of the chalybeate is to be gradually increased after two or three days, until it amounts to six or eight ounces, which, in most cases, will be sufficient, especially if a second course be taken at noon—a practice much to be recommended, as the effects of the chalybeate are rendered more permanent, and better borne by the stomach, than if the requisite quantity were taken on one occasion. The water should be sipped, and taken at several draughts, as its proper digestion will depend on this circumstance being attended to. But, if richly impregnated with carbonic acid gas, as by Mr. Gorringe's method, the water may be drank in large draughts, so as to retain the gas.

If the cold water disagree with the stomach—as it is apt to do in cases of chlorosis, and languid constitutions, in which the stomach is much weakened—a little hot milk may be added with advantage; or the water might be raised to the temperature of the Bath water, as suggested by Sir Charles Scudamore; by which its stimulating effects would be augmented, without materially interfering with its tonic properties. The water, however, should be at first used at its natural temperature, in every instance; its coldness, as we have seen, often powerfully co-operating, with other properties, to effect the salutary change in the system sought for. The aërated water, of course, must be drank at its usual temperature.

The unpleasant sensations referable to the head may be avoided, by proper attention to the stomach and bowels, as previously mentioned. It will be advisable, in many cases, to leave off taking the waters, after a fortnight's use, for a day or two; in the interim, a mild mercurial, followed by an aperient, will have a very good effect in equalizing the circulation in the digestive and associated organs. Shonld the circulation become excited, the warm bath (92° to 98°), used for ten or twenty minutes at noon, will further promote a desirable equilibrium.

It will be proper for females to commence the waters *after* the periodic indisposition; but subsequently, it may be continued through this period, if not disturbed. Should it be much influenced, as to recurrence, kind, or amount, &c., the quantity of the chalybeate should be reduced to one-half or a fourth, and used warm; or left off for a time. When suppression has long existed, if pain ensue, it will be advisable, nevertheless, to continue the waters in the usual quantity, as this is, for the most part, but a symptom of its successful action—provided the case be originally adapted for the chalybeate, as before remarked. In highly sensitive persons, with great irritability of the stomach, the waters taken in the usual way disagreeing, lavements of the same may be used with advantage, after the bowels have been evacuated; or baths of the chalybeate water might be tried, under like circumstances.

The teeth, after taking the waters, should be well brushed with some astringent; as tincture of myrrh, or solution of alum, mixed with water, if the gums are relaxed; finely powdered charcoal,* or carbonate of magnesia, or chalk and camphor, may be used as an ordinary dentifrice. The toilet should be completed before breakfast, especially if the invalid has followed the advisable practice, so general at the German Spas,—a morning course of the waters.

With reference to the duration of a course; this must depend upon circumstances—its effects on the constitution, disease, &c. As a general rule, from three to eight weeks may be stated; or a period of six weeks, if a second course be required in the autumn. The invalid must not be discouraged, should no immediate good effects follow; as, from the minute dose of steel present, its action must be gradually evinced: moreover, maladies which have taken a deep root in the system, require a steady and well-directed treatment for a period proportional to the inveteracy of the disorder, and to many other circumstances not admitting of notice here. The invalid must not give up taking the chalybeate, should some unaccountable sensations arise, unless very urgent, as they mostly denote its salutary operation on the various organs of the frame. It must not be discontinued too soon; nor should the larger quantity be left off abruptly: but the same order observed as at the commencement.

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* Lime-tree charcoal is the most suitable, from its softness, absorbing properties, and from its counteracting the disagreeable odour of carious teeth.

The DIET must be carefully regulated, and adapted to the disorder. All fruit, and especially flatulent vegetables, should be particularly avoided while drinking the waters, as considerably aggravating the flatulence, which is an occasional inconnience attending their use, and which proves very annoying to the dyspeptic invalid. If the water do not sit lightly on the stomach, a small cup of cocoa* may be taken half an hour previously. Finally, if noon be selected for taking the chalybeate—a practice by no means so salutary as the morning course—at least three hours should elapse from breakfast.

The invalid should rise early in summer, provided the general powers be not greatly depressed. Between seven and eight o'clock will be the most beneficial time for using the waters; then breakfast at half-past eight or nine o'clock. With many delicate constitutions, any active exertion before breakfast is but ill borne; in such cases, it will be advisable to breakfast half an hour after rising, which should not be later than eight o'clock. Breakfast should not be taken till the stomach feels empty. It may consist of cold toasted, or fine stale bread (4 oz.), with very little, if any, butter; a slice of lean mutton, or a fresh egg boiled soft; omitting the latter, if productive of irritation. The drink may consist of cocoa, with milk and sugar, but not of tea or coffee, as either decomposes the water. The drink must not exceed one breakfast cupful (half a pint), especially if the waters be taken after breakfast, as it is desirable to have the stomach as free from liquid as possible, in order to the more perfect absorption of the chalybeate. All new bread, cakes (particularly when rich), toast buttered while hot, must be especially avoided. Dodson's unfermented bread may be used with advantage, should acidity arise.

Rest must be observed for at least two hours subsequently; occupying the interval with any light pastime—drawing, music, or reading, &c.; but any *excitement,* whether from *music* or *reading,* must be *carefully shunned.* Luncheon must be altogether omitted.

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* That prepared by boiling the "nibs" for a few hours, is preferable to the various powders and pastes in common use, being much less likely to disagree with a weak stomach.

Dinner should be taken at half-past one or two o'clock, an interval of four or five hours having elapsed; as the practice of taking food "little and often" is (with few exceptions) reprehensible, from its tendency to overtax the stomach, by keeping it in a constant state of excitement. Rest should precede dinner at least half an hour, as exercise, bodily or mental, to fatigue, not only counteracts the good effects of the mineral waters; but, from impairing the digestive powers, which share with the system in all exhausting influences, it is doubly injurious. Dinner should consist of plainly cooked (well-boiled or roast) butchers' meat, as mutton, beef, of tender fibre and without fat. Venison is highly nutritious and digestible, but too stimulating for weak stomachs. The common fowl will be proper, but wild fowl and water fowl (goose, duck, &c.) must be abstained from. Fish, as whiting, sole, (boiled), may be used, but other kinds are unsuitable for invalids. Fish and vegetable food should preponderate in the diet during summer, as much animal food at this season is apt to prove too stimulating and heating, especially in weakly individuals. It will be proper to vary these, and to take a due proportion of bread and vegetables, as well-boiled rice, mealy potatoe, turnip, asparagus, French beans, broccoli; all of which must be well boiled, and used without butter or other indigestible adjunct, and in moderation, to avoid disagreeable distension. A little rice, sago, bread, or light batter pudding may be taken. Dessert had better be altogether omitted; if any be taken, a few ripe grapes without seed or skin, strawberries, ripe oranges, rejecting the white tissue and seeds, are the least objectionable. The drink may consist of a little toast-water; good sound well-fermented beer with plenty of hops, if it agree; Bass's pale ale; or a little sherry wine and water, according to circumstances.

The invalid will do well to adhere to the following quantity for dinner, as closely as possible: meat, 6 oz.; vegetables, bread, pudding, &c., not exceeding 4 oz.; drink, consisting of any of those mentioned, not exceeding 4 oz.; otherwise it is most difficult to keep within due bounds. As additional guides, I may mention the advice of Dr. Beaumont,—to desist when *feelings* of *satisfaction, ease,* and *quiescence* of body and *mind* arise—in fact, at the very time when most enjoyed; beyond this, *mal-aise* will inevitably supervene. Food should be well masticated, or cut very small, and slowly swallowed. The invalid should confine himself to one plain dish, if possible, for a plurality of dishes tend to excite the appetite beyond the bounds of safety.

The quantities above mentioned will serve as a general indication; but when individually applied, much variation may be necessary, which it is impossible to particularize in this brief outline. Returning strength will soon convince the valetudinarian, that privation and temperance are most conducive to bodily and mental health.

It may be inferred, that all aliments and drinks not mentioned are interdicted. I may state, however, that highly seasoned, fried, stewed, baked dishes; meat heated a second time; all rich meat; game; fish—as salmon, eels, salt fish, oysters, lobsters, crabs, shrimps—are objectionable. Heavy puddings, pies, custards, pastry, are all superlatively injurious to weak stomachs; cheese, especially new or toasted, pickles, and condiments generally (salt, mustard rarely, excepted) must be shunned. Many culinary vegetables, as waxy and new potatoes, peas and beans (except when young, rejecting the skin), carrots and parsnips (from their volatile oil disagreeing with many), horse-radish and common radish, lettuce, cress, cabbage, spinach, artichoke, mushrooms, cauliflower (except the top, when tender and well boiled), vegetable marrow, cucumber; most fruits, preserved or recent, especially stone fruits, as nuts of all kinds, apples, pears (least objectionable), except when roast, pine apples, figs, &c.,—all must be avoided.

Of drinks: broths, soups, turtle and others (mutton broth not fat, and chicken, excepted); ardent spirits, liqueurs, heating, and strong spirituous, high-coloured, sweet, new wines; strong ale, porter, stout—all these are improper; rarely excepting a very dilute spirit made with good brandy and water, which, with many, agrees better than any other stimulant, when this is admissible.

The invalid, especially the dyspeptic, must beware of taking food commensurate with the appetite; it is a deceptive guide in such cases; as the experience of an hour or two will subsequently make evident. It must be always borne in mind, that the stomach partakes with the system in the general loss of tone; consequently it is totally inadequate to appropriate for the economy, the customary amount or kind of food.

The invalid should likewise vary his food as much as possible, within the limits here prescribed; as a due variety and proportion of animal and vegetable nutriment are most conducive to perfect health; except in a few rare instances, where a diet exclusively animal or vegetable may be necessary. It must be recollected, that any excess or other indiscretion at dinner, from its being the most nutritrious and substantial meal, would be most detrimental.

The interval between dinner and tea should not be occupied with any considerable mental or corporeal exertion; at the earliest, two or three hours must elapse before any exercise be again taken. A cup of weak black tea or cocoa, with a little toast or biscuit, may be taken about six or seven, P. M.; chocolate, from its oily matter, and green tea, from its exciting effects, must not be taken. Supper will be rarely necessary; in some cases, however, when, from a feeble state of health or custom, the stomach might feel uncomfortable during the night if empty, a little thin arrowroot, gruel, or a little wine and water, with a small quantity of dry toast or biscuit, may be advantageously used before retiring to rest: this should not be later than ten o'clock.

It may be observed, that from the exciting qualities of the air of Tunbridge Wells, the diet must be mild, and for the most part without stimulants; as headache of a nervous character, and other disagreeable sensations are likely to ensue, even from the customary diet at home being adhered to. The confirmed dyspeptic invalid must restrain himself a yet more limited allowance of food, especially as regards its quality.

That form of indigestion, however, which affects the invalid receiving benefit from a residence at Tunbridge Wells, is of a character in which a little less stringent dietary may be observed, than would be required in a more irritable variety of dyspepsia. But still the diet must be confined within very circumscribed limits; it should be nutritious, digestible, small in amount, and taken at regular periods; vegetables must be for the most part excluded. Meat, bread, rice, weak black tea, warm but not hot, with little sugar or milk, should form his principal diet; fish had better be excluded, as well as white meats. A little weak brandy and water, or old sherry, madeira, (not exceeding one glass), diluted with an equal quantity of water, may be taken at dinner; or a cup of coffee will often prove a better potation.

The dyspeptic must sedulously observe all the injunctions previously given, a persevering observance of which, in conjunction with the chalybeate water, due regulation of the secretions and excretions, friction or the shower bath, exercise by walking or riding, early hours, hopeful feelings, and cheerful society—all severe intellectual or mental disquietude being if possible avoided,—will reward him for his patient observance of a tedious, but effectual *regime*.

Parents should be cautious in regulating the diet of children, so as not to exceed the healthful standard: as to time, which may be a little oftener than with adults; as to quantity; and especially as to the quality of their food. A light farinaceous milk diet, with but a small proportion of animal food, will be more conducive to perfect health in the generality of delicate children, than a too stimulating diet, which is a most fruitful source of the disorders of childhood.

As to the *time* for EXERCISE; if the invalid take the waters, exercise must be subsequently practised, except when there exists great debility; in this case, a little rest on a sofa on returning home, will be more appropriate; if the debility be such as to prevent the individual from walking to the spring, a Bath-chair or donkey-chaise may be used. It will be proper not to take exercise early in the morning, after seven or eight P.M. in summer, sooner than two or three hours after meals, or during the oppressive midday heat; from eleven to one o'clock in the forenoon, and from five to seven in the evening, will be most suitable for the generality of invalids. The pulmonary invalid must particularly observe these directions.

The amount of exercise must altogether depend on the peculiarities of each case; in very delicate and weakly subjects, it must be very gentle at first, continued only for such a time as will not exhaust the system, and repeated at short intervals. With the less feeble, from two to four hours may be stated as a reasonable quantum;—but all such should try to live out of doors as much as possible, as in the good old times of Beau Nash, when houses served merely as temporary abodes "for eating and sleeping."

As to the *kind* of exercise to be adopted; this must be often decided by experience; but for the majority of delicate and nervous invalids resorting to Tunbridge Wells, horse-exercise deserves a decided preference; it is exactly of that kind intermediate between active (walking &c.) and passive (in a carriage) exercise, combining the advantages of both, and avoiding the disadvantages of either. By it, the respiratory organs are brought into full play—of the first importance to consumptive persons;* abdominal plethora and obstructions are removed, the digestive organs receiving special benefit and tone. But we cannot agree with Lady Seymour in recommending "asinine equitation," except to timid invalids with very feeble powers; and must entirely dissent from Mrs. Barbauld's assertion, that "the ass is much better than the horse to *shew off a lady*—for this reason, *that her beauty is not so likely to be eclipsed.*" No; let not the fair equestrian fear competition with the noble animal, proudly careering, yet humbly contributing to "the glow of health, the brilliancy of complexion a gallop produces, which nothing else imparts to a lady's cheek." This mode of exercise is further advantageous, from its admitting of the more distant rural attractions being visited and enjoyed; fatigue, moreover, is less likely to ensue, as the amount and degree of exercise admit of better regulation. Something more than an insipid lounge, will be necessary to derive the essential advantage from exercise sought for. Some pleasing object of pursuit should, if possible, accompany exercise, as its salutary effects will be enhanced by agreeable occupation of the mind; the numerous productions of nature and art abounding in this neighbourhood will afford ample scope for choice.

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* The illustrious Sydenham affirmed, that horse exercise is as certain a cure for consumption as bark is for ague.

The equestrian should try to obtain a docile horse, as the converse would considerably detract from this healthy mode of exercise. The invalid will avoid riding too fast, as calculated to produce perspiration, and liability to cold from subsequent chill; riding against a strong wind would be improper. The pulmonary invalid will select, in windy weather, the less exposed but delightful rides in the neighbourhood of Eridge, Frant, Bayham Abbey, &c., and avoid exposure to a strong sun.

The nervous and dyspeptic will choose the elevated tableland, forming Mount Ephraim, Rusthall, Langton, Speldhurst, Bidborough, Southborough, &c. Varying the rides will be not only agreeable, but salutary. Rest, for at least half an hour, should precede meals, the invalid carefully avoiding exposure to draughts of cold air while changing the dress, especially if over-heated.

Walking will form the exercise of the majority; it is well calculated to bring into action the whole muscular system, and produce all the good effects from exercise previously mentioned. The very feeble had better take short and frequent walks. The invalid, with disease of the heart and lungs, should keep on level ground, and avoid ascending and descending the many undulations forming the peculiar feature of Tunbridge Wells. A steady, but not a quick pace, variation of walk, and an agreeable companion, are to be recommended. The literary character should leave his books at home. Moderately thick-soled shoes, and lamb's-wool stockings, will produce less fatigue in walking.

Carriage exercise will be much in requisition by elderly persons, or very feeble subjects; with those in whom passive exercise is alone admissible, or where distant places are visited. But let all not included here avoid this practice, if it be their object to regain health, as this species of exercise can never supersede active bodily exertion: an open carriage is preferable, particularly in summer.

Friction, with a flesh-brush or flannels, is another most *invaluable practice*, especially for those who cannot adopt more active bodily exertion; as in persons affected with organic disease of the heart, paralysis, gout, rheumatism, in sedentary occupations, &c.; it should be practised for a quarter of an hour, morning and evening.

When the weather does not permit, the practice recommended by Mr. Abernethy, may be adopted—to walk up and down a spacious room with the windows open.

Amongst other varieties which may occasionally be used advantageously by the young, may be mentioned archery, fencing, throwing the quoit; all these tend to expand the chest, and call into action the muscles of the upper portion of the body; but cricket, and all fatiguing games, must be avoided. Dancing would not be objectionable to the delicate, if carried on judiciously as to time and place.

Other kinds of exercise combined with amusement—perhaps [illegible] should rather say, excitement—as music, singing, reading aloud, or perusing imaginative works, call for little notice here, except to remark, that, although indulged in moderation (time and weather not permitting out-door exercise), yet for the most part they are of a character little suited for the sensitive invalid; negatively, by infringing upon what can never be superseded—active exertion in the open air; positively, by inducing a state of the mental and corporeal constitution, the parent of most of those distressing maladies characterized by undue susceptibility to otherwise salutary external influences.

Repose is not less requisite to the invalid than exercise: the directions previously given as to diet, exescise, &c., if duly observed, will insure sound repose. As a general rule it may be stated, that sleep should not be indulged in during the day or after meals, from its tendency to prevent this salutary restorative at the proper time; in very feeble nervous subjects, however, half-an-hour's sleep after dinner may be taken; the best posture to assume will be sitting in a large arm-chair, with the feet supported on a high stool. Eight hours' rest, or at most nine, will be sufficient; if indulged in for a longer period, it tends to weaken the digestive organs, to relax and enervate the nervous system.

Lighting a fire, except occasionally in winter, or keeping a *fire constantly* burning, should be avoided. The bed-clothes must be light and cool, just sufficient to retain a moderate warmth. A little cheerful society, agreeable at all times, will powerfully contribute to sound sleep, by dispelling mental disquietude. The extremities should be warm, either naturally, or artificially by a fire or a vigorous application of the flesh brush. The period allotted to sleep must not be prolonged should the invalid have passed a restless night, as Nature will make up for the deficiency by sound sleep on the ensuing night. Much will also depend upon the digestive organs not being overloaded or oppressed with superabundant or improper food.

Bathing is another important auxiliary in restoring health: thus, the warm hip-bath (92° to 98° Fahr.) is very beneficial in some of those uterine affections previously noticed. In nervous maladies, scrofulous affections generally, in predisposition to consumption, and in atonic dyspepsia, the shower-bath [illegible] have an excellent effect, not only by strengthening the system; but by obviating the liability to catch cold—often the predisposing cause of many fatal diseases, amongst which consumption is conspicuous.

Noon is the best time for invalids to bathe; using a bath every second day will be sufficient in most cases. The appearance of such symptoms as chilliness, headache, stupor, or lassitude after using the shower-bath, or any other bath, would contraindicate its repetition. The shower-bath may be used, when indicated, at first tepid (about 85° Fahr.), gradually reducing the temperature till that of the atmosphere is obtained, provided none of the above unpleasant sensations occur; should these arise, the heat of the water should be again raised to the original height, or until the monitory symptoms disappear. The feet should be put into warm water (98° Fahr.); a cap should be worn on the head, and the shock received principally on the back of the neck and shoulders. Brisk friction should follow; and active exercise for half an hour subsequently will be proper.

Invalids should bestow special care on their CLOTHING, so as to adapt it to atmospheric mutations; this will be particularly requsite at Tunbridge Wells in summer, as, from the *varying elevation* of its several parts, as well as from the many inducements to take exercise, the surface is exposed to a range of temperature that might prove injurious. To guard against this, it will be advisable to wear cotton next the skin; as it possesses the two-fold property of slowly conducting heat to and from the system, at the same time facilitating transpiration and absorbing perspiration; thereby preventing sudden or considerable changes of temperature,—points of no small consequence to delicate persons, especially if affected with, or predisposed to pulmonary complaints.

The clothing must be particularly adapted to the kind and amount of exercise; so much being worn as will protect the person from excessive heat or chill; the feet especially should be well preserved from cold or damp. The materials should be pliable, and as all tight dress is highly objectionable, moderation must be exercised. Invalids should carefully avoid being over-heated or exposed to draughts; the clothing in the morning and evening should be warmer than at mid-day. As the greatest range of temperature at Tunbridge Wells takes place in May, it will be advisable not to make any alteration in the winter dress till the beginning or middle of June, and to resume it in September. Those who take little exercise, or of a passive kind, will require proportionally more clothing to keep the surface at an uniform temperature, and the circulation duly balanced.

Having now rapidly glanced at the most essential circumstances connected with restoration of health, we conclude by remarking, that, on a faithful and persevering observance of these hygiènic injunctions, will depend the completion of the invalid's hopes respecting the sanative influence of Tunbridge Wells.

THE END.

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A MEDICAL TOPOGRAPHY

OF TUNBRIDGE WELLS;

Illustrating the beneficial influence of its Mineral Waters, Climate, Soil, &c. in restoring and preserving Health.

WITH AN OUTLINE OF HYGIENE.

OPINIONS OF THE PRESS.

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"We are glad to hail the appearance of this work, and pleased to see one of our resident professors of the healing art give a portion of his time and attention to the very important subjects here treated of. It has long been a matter of regret, that (with the exception of Dr. Yeats) none of our Physicians or Surgeons should have touched upon a subject so important to the visitors and residents of this place. This want is, however, now supplied, and we think well supplied, by the work of Dr. Powell, which will afford a guide to those using the waters, to the proper mode of taking them, and the diseases for which they may be taken; and also containing some hints on the choice of situation for invalids residing here. In this little work will be found a mass of information relative to Tunbridge Wells, never before offered to the public, and the subjects are treated on in a succinct and pleasing manner. Thus we have an account of the Chalybeate Spring, its history, physical properties, analysis, chemical constitution and medicinal properties; a list of complaints benefited by the mineral spring, with directions for its use; meteorological tables, climate; and concluding with an account of Hygiène.

"*We strongly* recommend Dr. Powell's work to the visitors and residents of the *place. It is neatly* bound, well printed, and contains a map of Tunbridge Wells, *an old view of the Springs,* and a view of the Parade."—*Tunbridge Wells* Looker-on, *Aug. 1846.*

J. Colbran, Tunbridge Wells; J. Churchill, Princes Street, Soho, London.